AMENDMENTS TO THE CLAIMS

(Currently Amended) A method comprising:
forming a silicon germanium layer on a substrate in a processing chamber;
removing, in the processing chamber, a portion of the silicon germanium layer;
following removing a portion of the silicon germanium layer, smoothing, in the
processing chamber, a surface of the silicon germanium layer; and

forming a silicon layer on the smoothed surface of the silicon germanium layer, wherein a lattice spacing of the silicon is mismatched with a lattice spacing of the relaxed silicon germanium.

- 2. (Original) The method of Claim 1, wherein the substrate is not removed from the processing chamber until after the silicon layer is formed.
- 3. (Original) The method of Claim 2, wherein the processing chamber is kept under vacuum from a time at least as early as during removal of a portion of the silicon germanium layer until after completion of formation of the silicon layer.
- 4. (Previously Presented) The method of Claim 1, wherein forming the silicon germanium layer comprises:

forming a first layer of silicon germanium on a silicon substrate, wherein from the substrate, the first layer has an increasing concentration of germanium throughout a thickness of the first layer; and

forming a second layer of silicon germanium on the first layer of silicon germanium, wherein the second layer has a constant concentration of germanium throughout a thickness of the second layer.

5. (Original) The method of Claim 4, wherein forming the first layer comprises:

increasing the concentration of germanium in the first layer so that the concentration of germanium increases by 10% for every micron of the thickness of the first layer.

- 6. (Original) The method of Claim 4, wherein forming the second layer comprises: including approximately the same concentration of germanium in the second layer as the concentration of germanium in an upper portion of the first layer.
- 7. (Original) The method of Claim 4, wherein the second layer is formed to a thickness between approximately 0.5 and 1 micron.
- 8. (Original) The method of Claim 1, wherein removing comprises: introducing an etchant to a surface of the silicon germanium layer.
- 9. (Original) The method of Claim 8, wherein the etchant comprises: at least one of HCl and HBr.
- 10. (Original) The method of Claim 1, wherein a thickness between approximately 0.1 and 0.2 microns of the silicon germanium layer is removed.
- 11. (Previously Presented) The method of Claim 1, wherein smoothing comprises: introducing a smoothing agent to the surface of the silicon germanium layer.
- 12. (Original) The method of Claim 11, wherein the smoothing agent comprises hydrogen.
- 13. (Original) The method of Claim 12, wherein the hydrogen is introduced at a temperature of approximately 1100° Celsius.

14. (Original) The method of Claim 1, wherein the silicon layer is formed to a thickness between approximately 50 Å and 1000 Å.

15-20. (Canceled)

21. (Currently Amended) A method comprising:

forming a first layer of silicon germanium on a silicon substrate in a processing chamber, wherein from the substrate the first layer has an increasing concentration of germanium throughout a thickness of the first layer and away from the substrate;

forming, in the processing chamber, a second layer of silicon germanium on the first layer of silicon germanium, wherein the second layer has a constant concentration of germanium throughout a thickness of the second layer;

removing, in the processing chamber, a portion of the second layer;

following removing a portion of the second layer, smoothing, in the processing chamber, a surface of the second layer; and

forming a strained silicon layer on the smoothed surface of the second layer.

- 22. (Original) The method of Claim 21, wherein the substrate is not removed from the processing chamber until after the silicon layer is formed.
- 23. (Original) The method of Claim 22, wherein the processing chamber is kept under vacuum from a time at least as early as during removal of a portion of the second layer until after completion of formation of the silicon layer.
- 24. (Original) The method of Claim 21, wherein forming the first layer comprises:

increasing the concentration of germanium in the first layer so that the concentration of germanium increases by 10% for every micron of the thickness of the first layer.

- 25. (Original) The method of Claim 21, wherein forming the second layer comprises: including approximately the same concentration of germanium in the second layer as the concentration of germanium in an upper portion of the first layer.
- 26. (Original) The method of Claim 21, wherein removing comprises: introducing an etchant to a surface of the second layer.
- 27. (Original) The method of Claim 26, wherein the etchant comprises: at least one of HCl and HBr.
- 28. (Previously Presented) The method of Claim 21, wherein smoothing comprises: introducing a smoothing agent to the surface of the second layer.
- 29. (Original) The method of Claim 28, wherein the smoothing agent comprises hydrogen.
- 30. (New) The method of claim 1, wherein the strained silicon layer is an expansive strained silicon layer.
- 31. (New) The method of claim 21, wherein the strained silicon layer is an expansive strained silicon layer.